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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,654	09/29/2003	Akio Ishikawa	51272/DBP/A400	4784

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EXAMINER

STREGE, JOHN B

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/674,654

Applicant(s)

ISHIKAWA, AKIO

Examiner

John B. Strege

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/03,09/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 11/255,136. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application is broader than application 11/255,136 and all of the limitations of the instant application are contained in 11/255,136. For Example the first claim will be mapped below from the instant application to claim 1 of 11/255,136.

Application 11/255,136 discloses an image defect inspection method for detecting a gray level difference between the corresponding parts of two images,

comparing the detected gray level difference with a threshold value, and judging the part to be a defect when the gray level difference is larger than the threshold value (claim 1 lines 1-6), wherein cumulative frequencies of the calculated gray level differences are calculated (claim 1 lines 7-8, computed is the same as calculated), wherein converted cumulative frequencies are calculated by converting the cumulative frequencies so as to be linear with the gray level differences in a predetermined distribution with which the gray level differences are assumed to be distributed (claims 1 lines 9-14), wherein a straight line approximation is calculated by approximating the converted cumulative frequencies to a straight line (claim 1 lines 15-20), wherein a threshold value is determined from a predetermined cumulative frequency based on the calculated straight line approximation according to a predetermined calculation method (claim 1 lines 25-28), and wherein a comparison is made according to the determined threshold value (claim 1 lines 29-30).

Claims 2-27 are disclosed by 11/255,136 claims 1-19.

In a similar manner the independent claims 28-30 can be mapped to claim 1, with the differences between claims 28-30 and claim 1 of the instant application being disclosed in lines 15-28 of 11/255,136.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of

compending Application No. 11/206,706. Although the conflicting claims are not identical, they are not patentably distinct from each other because all of the limitations of the instant application are disclosed in 11/206,706. For example the instant application of claim 1 will be mapped out to claim 3 of 11/206,706 below.

Application 11/206,706 discloses an image defect inspection method for detecting a gray level difference between the corresponding parts of two images, comparing the detected gray level difference with a threshold value, and judging the part to be a defect when the gray level difference is larger than the threshold value (claim 1 lines 1-7), wherein cumulative frequencies of the calculated gray level differences are calculated (claim 3 lines 6-7, computed is the same as calculated), wherein converted cumulative frequencies are calculated by converting the cumulative frequencies so as to be linear with the gray level differences in a predetermined distribution with which the gray level differences are assumed to be distributed (claim 3 lines 8-12), wherein a straight line approximation is calculated by approximating the converted cumulative frequencies to a straight line (claim 3 lines 14-16), wherein a threshold value is determined from a predetermined cumulative frequency based on the calculated straight line approximation according to a predetermined calculation method (claim 1 lines 11-13), and wherein a comparison is made according to the determined threshold value (claim 1 lines 1-13). The rest of the claims are found in claims 1-19 of 11/206,706.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 11/298,113. Although the conflicting claims are not identical, they are not patentably distinct from each other because all of the limitations of the instant application are disclosed in 11/298,113. For example the instant application of claim 1 will be mapped out to claim 3 of 11/298,113 below.

Application 11/298,113 discloses an image defect inspection method for detecting a gray level difference between the corresponding parts of two images, comparing the detected gray level difference with a threshold value, and judging the part to be a defect when the gray level difference is larger than the threshold value (claim 1 lines 1-7), wherein cumulative frequencies of the calculated gray level differences are calculated (claim 3 lines 6-7, computed is the same as calculated), wherein converted cumulative frequencies are calculated by converting the cumulative frequencies so as to be linear with the gray level differences in a predetermined distribution with which the gray level differences are assumed to be distributed (claim 3 lines 8-12), wherein a straight line approximation is calculated by approximating the converted cumulative frequencies to a straight line (claim 2 lines 1-8), wherein a threshold value is determined from a predetermined cumulative frequency based on the calculated straight line approximation according to a predetermined calculation method (claim 1 lines 22-25), and wherein a comparison is made according to the determined

threshold value (claim 1 lines 26-27). The rest of the claims are found in claims 1-21 of 11/298,113.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 28 is rejected under 35 U.S.C. 102(e) as being anticipated by Yuichiro et al. Japanese patent Application 200-205037 (hereinafter “Yuichiro”, English abstract used).

Yuichiro discloses an image defect inspection apparatus comprising: a difference image detection section for detecting a gray level difference between the corresponding parts of two images; and a defect detection section for comparing the detected gray level difference with a threshold value and judging the part to be a defect when the gray level difference is larger than the threshold value, wherein the difference image detection section detects positive- or negative-signed gray level differences, wherein

said apparatus further comprises: an average calculation section for calculating the average of the signed gray level differences; a correction section for calculating signed corrected gray level differences by correcting the signed gray level differences with the calculated average; and an absolute-value conversion section for calculating absolute-value corrected gray level differences without sign from the signed corrected gray level differences, and wherein the defect detection section compares the absolute-value corrected gray level differences with the threshold value (all taken from the English abstract, translation of document pending).

Allowable Subject Matter

7. Claims 1-27, and 29-30 would be allowable if rewritten or amended to overcome the rejections under Double Patenting, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 1, none of the prior art discloses an image defect inspection method wherein converted cumulative frequencies are calculated by converting the cumulative frequencies so as to be linear with the gray level differences in a predetermined distribution with which the gray level differences are assumed to be distributed, wherein a straight line approximation is calculated by approximating the converted cumulative frequencies to a straight line, wherein a threshold value is determined from a predetermined cumulative frequency based on the calculated straight line approximation according to a predetermined calculation method. Murayama USPN 6,137,541 discloses calculating a threshold based on cumulative frequency, however

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does not disclose the limitations addressed above. Furthermore the prior art cited by the Applicant (03-228833 by Takahiro, and 2000-205037 by Yuichiro et al.) disclose defect inspection methods for setting a threshold but do not disclose the limitations as set forth above. Claim 14 is similarly analyzed to claim 1.

Regarding claims 29-30, none of the prior art discloses an image defect inspection method wherein two threshold values are determined for the positive and negative areas from the cumulative frequencies according to a predetermined calculation method and half of the difference between the two positive and negative threshold values is determined as a corrected threshold value, wherein absolute-value corrected gray level differences are calculated by correcting the gray level differences with the average of the two positive and negative threshold values.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 6,993,183 Image processing apparatus.

USPGPUB 2005/0013475 Method for detecting defects.

USPN 4,868,651 Digital Radiography with image brightness and contrast normalization.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Strege whose telephone number is (571) 272-

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7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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